

Support Information

A Thermosensitive Chitosan Hydrogel Enabled MnO₂ Nanozyme Delivery with NO Release for Enhanced Corneal Repair

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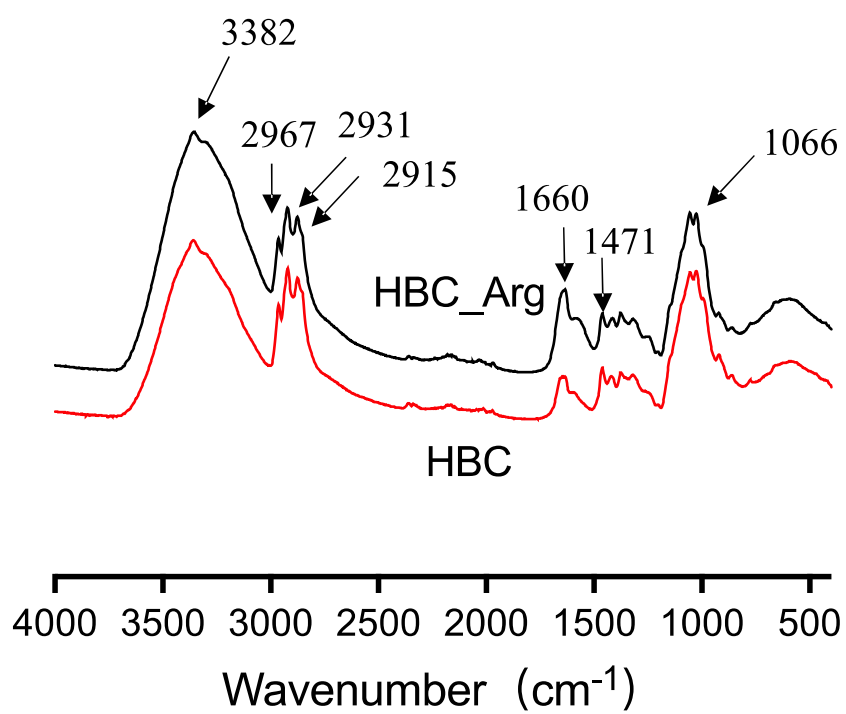


Figure S1. FT-IR spectrum of HBC and HBC_Arg.

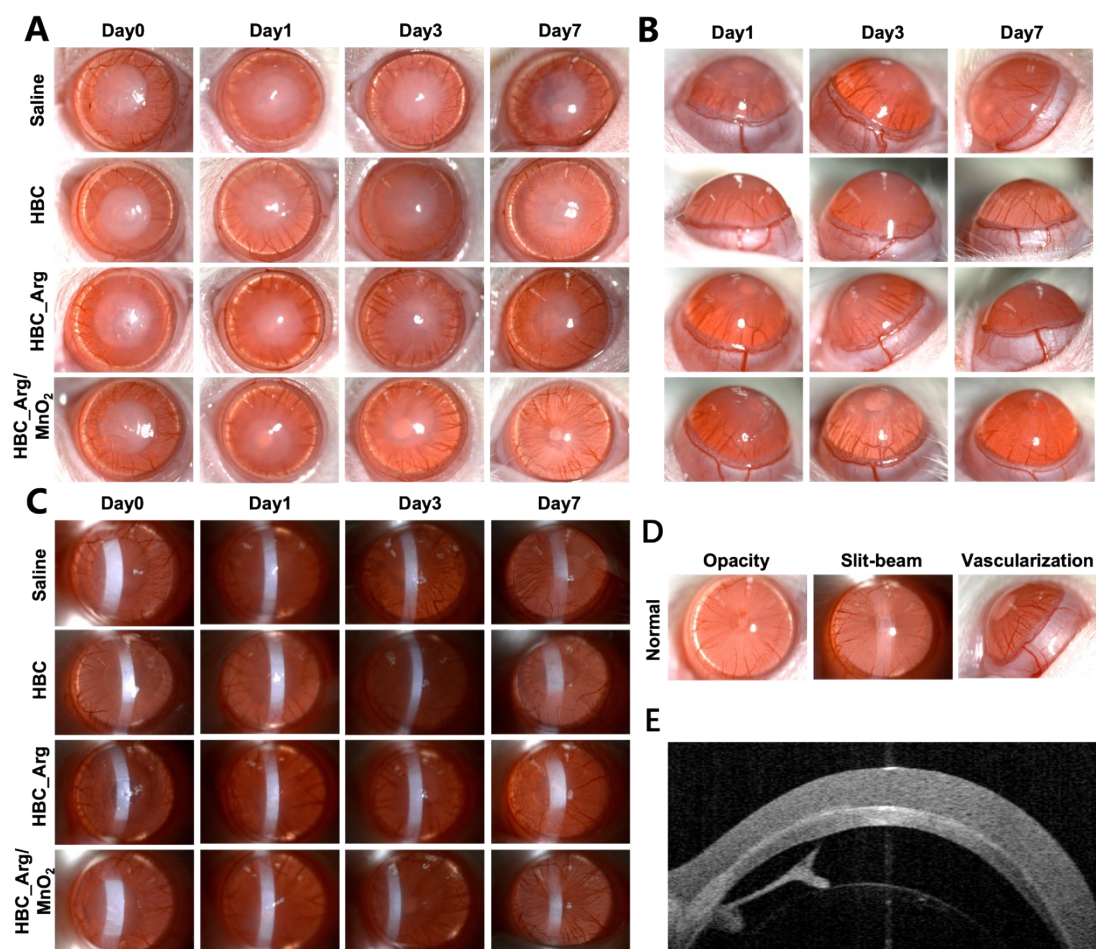


Figure S2. *In vivo* evaluation of wound healing in corneal alkali burns in rats. (A) Representative slit lamp images showing corneal opacity, (B) corneal vascularization, and (C) slit-beam imaging of the wounded areas at different time points post-alkali burn. (D) Representative slit lamp images of normal rat corneas. (E) Representative anterior segment optical coherence tomography (AS-OCT) image of the rat cornea after applying the HBC_Arg/MnO₂ hydrogel.

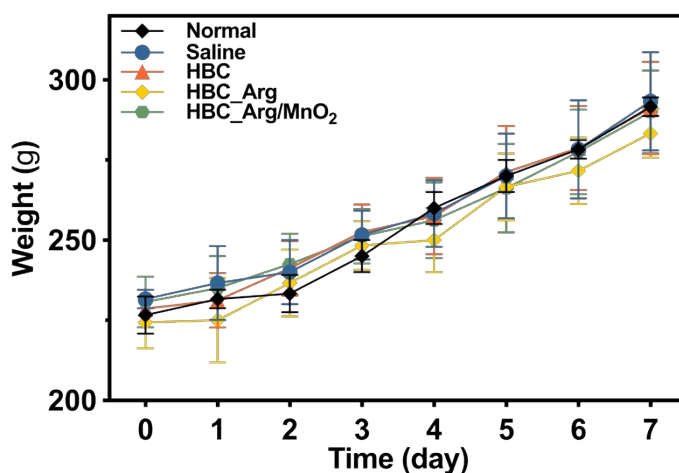


Figure S3. Weight changes of rats following alkali burn on ocular surface under different treatments at various time point. Data were presented as mean $\pm$ SD; n = 3.

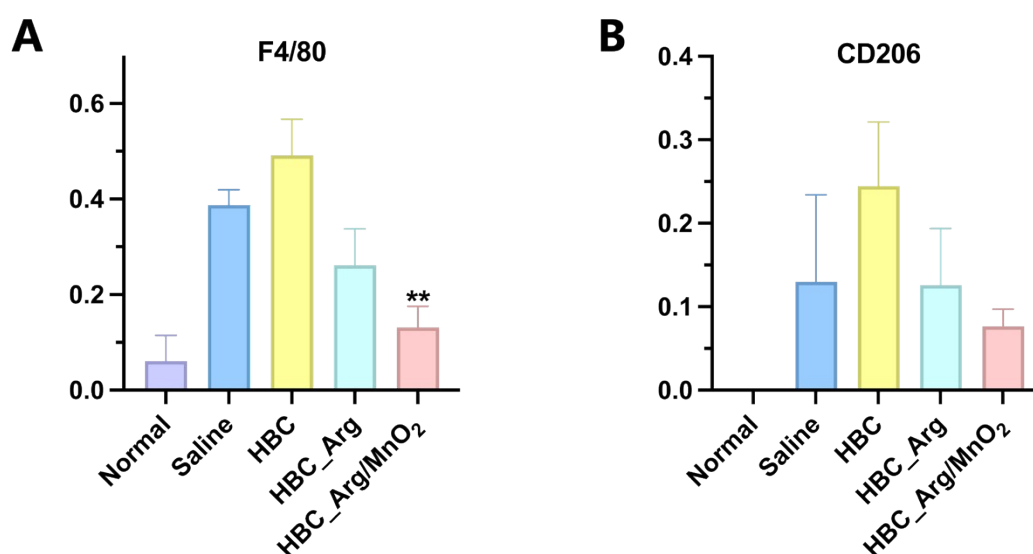


Figure S4. Proportion of F4/80-positive and CD206-positive cells ratio in each group on postoperative day 7. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, and **** $p < 0.0001$ versus the Saline

group.

Table S1. Primers used for quantitative real-time PCR.

Primer	Segment	Sequence
GAPDH	Forward (5'-3')	AGGTCGGTGTGAACGGATTTG
(Mouse)	Reverse (3'-5')	GGGGTCGTTGATGGCAACA
IL-1 β	Forward (5'-3')	AAGGGGACATTAGGCAGCAC
(Mouse)	Reverse (3'-5')	ATGAAAGACCTCAGTGCGGG
MMP-9	Forward (5'-3')	GCAGAGGCATACTTGTACCG
(Mouse)	Reverse (3'-5')	TGATGTTATGATGGTCCCCTTG
TNF- α	Forward (5'-3')	CTCAGCGAGGACAGCAAGG
(Mouse)	Reverse (3'-5')	AGGGACAGAACCTGCCTGG
IL-6	Forward (5'-3')	GACTGGGGATGTCTGTAGCTC
(Mouse)	Reverse (3'-5')	CACCAGCATCAGTCCCAAGA
CD86	Forward (5'-3')	TCAATGGGACTGCATATCTGCC
(Mouse)	Reverse (3'-5')	GCCAAAATACTACCAGCTCACT
iNOS	Forward (5'-3')	GCGCTCTAGTGAAGCAAAGC
(Mouse)	Reverse (3'-5')	AGTGAAATCCGATGTGGCCT
CD206	Forward (5'-3')	TCAATGGGACTGCATATCTGCC
(Mouse)	Reverse (3'-5')	GCCAAAATACTACCAGCTCACT
Arg-1	Forward (5'-3')	AACCATCTGGGGCATCACAG
(Mouse)	Reverse (3'-5')	ACCAGAAAGGAACTGCTGGG
GAPDH	Forward (5'-3')	GCAAGAGAGAGGCCCTCA
(Rat)	Reverse (3'-5')	TGTGAGGGAGATGCTCAGTG
IL-1 β	Forward (5'-3')	CACCTCTCAAGCAGAGCACAG
(Rat)	Reverse (3'-5')	GGGTTCCATGGTGAAGTCAAC
MMP-9	Forward (5'-3')	TTCGACGCTGACAAGAAGTG
(Rat)	Reverse (3'-5')	AGGGGAGTCCTCGTGGTAGT
α -SMA	Forward (5'-3')	ACCATCGGGAATGAACGCTT
(Rat)	Reverse (3'-5')	CTGTCAGCAATGCCTGGGTA
VEGF	Forward (5'-3')	GGCTTTACTGCTGTACCTCC
(Rat)	Reverse (3'-5')	CAAATGCTTTCTCCGCTCT

Table S2. Elemental analysis of HBC and HBC_Arg.

	Weight [mg]	Method	N [%]	C [%]	H [%]	S [%]	C/N weight ratio	C/N molar ratio
HBC	1.76	coal50	4.50	50.15	8.269	0.178	11.14	13.00
HBC_Ar	2.05	coal50	6.08	47.99	7.934	0.106	7.89	9.21

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